UNITED STATES DEPARTMENT OF COMMERCE
Chief Financial Officer
Assistant Secretary for Administration
Washington, D.C. 20230

JAN 29 2003

Mr. Rick Klimkos
Federal Energy Management Program, EE-90
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585-0121

Dear Mr. Klimkos:

In accordance with the Department of Energy's guidance, enclosed is the Department of Commerce's FY 2002 Federal Agency Annual Report on Energy Management. The Report includes the Department's FY 2002 Annual Energy Management Data Report, FY 2002 Energy Scorecard, and FY 2003 Energy Management Implementation Plan.

As noted in the Report, the Department of Commerce is reporting a 35 percent reduction in energy usage in standard buildings and a 27 percent reduction in energy usage in laboratory and industrial facilities. I am particularly proud that our Agency Energy Team was nominated for and received a Presidential Award for Leadership in Energy Management this year.

If you have any questions, please do not hesitate to contact Ms. Regina Larrabee, Energy Manager, Office of Real Estate Policy and Major Programs at 202-482-2345.

Sincerely,

Denise L. Wells
Acting Director for Administrative Services

Enclosure

cc: Otto Wolff, CFO/ASA

The Annual Report on Energy and Water Management for Fiscal Year 2002

U. S. Department of Commerce

I. **Management and Administration.** The Department of Commerce (DoC) includes a wide variety of individual bureaus, who, collectively, play a powerful role in the U.S. economy. The activities of the Department and its Bureaus promote economic growth through improved technology, sustainable development, increased trade, and information analysis. For Fiscal Year (FY) 2002, the DoC is reporting a 35 percent reduction in energy usage compared to the FY 1985 baseline.

Commerce's Department Administrative Order #217-16, *Federal Energy Management*, prescribes policies, assigns responsibility, and provides program guidelines for energy and water management. Responsibility for energy and water management in Commerce facilities include the following:

- Headquarters, Herbert C. Hoover Building (energy only),
- National Oceanic and Atmospheric Administration (NOAA),
- National Institute of Standards and Technology (NIST),
- National Technical Information Service, and
- Bureau of Census.

A. Energy Management Infrastructure

1. **Senior Agency Official**. The Senior Official for the Agency Energy Team is Mr. Otto J. Wolff, Chief Financial Officer and Assistant Secretary for Administration. The senior official participates at the Interagency Energy Policy Committee meetings and ensures all actions under the Strategic Implementation Plan for Energy Management are accomplished to meet the Federal goals.

2. **FY2002 Agency Energy Team**. The Department's Agency Energy Team members were:

   - Jim Woods, Associate Director, Office of Real Estate Policy and Major Programs, DoC;
   - Bernie Denno, Chief, Environmental Compliance and Safety Division, NOAA;
   - Doug Elznic, Chief, Plant Division, NIST;
   - Gordon B. Fox, Chief, Facilities Engineering Unit, NIST
   - Mark Kuklewicz, Facilities Engineering Group, NIST;
   - Regina Larrabee, Energy Manager, DoC;
   - Mike Sade, Director, Acquisition Management, DoC.

B. Management Tools

1. **Awards (Employee Incentive Programs).** Each Bureau takes advantage of its own incentive programs to reward its exceptional employees. In addition, the Department actively participates in the "You Have The Power" and "Federal Energy and Water Management Awards" programs, sponsored by the Department of Energy (DoE).

2. **Performance Evaluations.** Key Department and Bureau Energy Managers have energy efficiency elements in their position descriptions and performance evaluations. An energy reduction goal has been a part of the performance criteria for senior management officials for several years.

3. **Training and Education.** The Department recognizes that access to job-related training is important for every employee to do his/her job well. The Agency Energy Team is attempting to ensure that facility energy management personnel are aware of appropriate training opportunities as they arise. In some cases, basic energy management training is provided informally by Bureau energy management staff.

4. **Showcase Facilities.** The design for NOAA's National Marine Fisheries Service Honolulu Laboratory was designated as a Federal Energy Saver Showcase Project for FY 2002. This redesign of an existing research laboratory makes use of low-energy building design strategies, efficient technologies and renewable energy. The project team's goal was to attain a U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED™) gold level rating for the facility through the use of such strategies as natural daylighting, solar water heating, liquid desiccant dehumidification, occupancy sensors, and a new building management system.

   NOAA has also nominated the Weather Forecasting Station in Caribou, Maine, as a Showcase Facility. This facility has incorporated the LEED™ design guidance by including energy and water efficiency and other sustainable design features.

II. Energy Efficiency Performance.

DoC reported energy consumption in two categories: 1) Standard buildings and 2) Industrial and Laboratory facilities.

A. Energy Reduction Performance

1. **Standard Buildings.** Energy use for standard buildings was 119,476 Btu-per-gross-square-foot (Btu/GSF) for FY 1985 (the base year) and 78,234 Btu/GSF for

FY 2002. This is a 35 percent reduction as compared to FY 1985 and a 1 percent reduction as compared to FY 2001. Some energy consumption data is estimated based on previous energy audit reports.

2. **Industrial and Laboratory Facilities.** Energy use for energy intensive buildings was 315,975 Btu-per-gross-square-foot (Btu/GSF) for FY 1990 (the baseline year) and 231,299 Btu/GSF for FY 2002. This is a 27 percent reduction as compared to FY 1990, and a 7 percent reduction as compared to FY 2001. Some energy consumption data is estimated based on previous energy audit reports.

3. **Exempt Facilities**. The Department did not exempt any of its facilities from the requirements of Executive Order 13123, *Greening the Government Through Federal Energy Management.*

4. **Tactical Vehicle and Equipment Fuel Use**. The DoC has developed a strategy for meeting and maintaining the requirement that 75 percent of all eligible vehicle acquisitions be alternative fuel vehicles. DoC also strives to meet the E. O. 13149, *Greening the Government Through Federal Fleet and Transportation Efficiency,* requirement for the 20 percent reduction in petroleum consumption by FY 2005 by replacing light-duty trucks with sedans and minivans, and four-wheel-drive vehicles with two-wheel drive vehicles where feasible.

B. Renewable Energy. During recent years, the Department and Bureaus have considered various opportunities for using renewable energy sources. The Department encourages such efforts.

1. **Self-generated renewable energy.** Small-scale projects that self-generate energy using renewable sources (such as photovoltaics or wind turbines) or renewable energy thermal projects (such as solar thermal, biomass, or geothermal) continue to be executed whenever possible. During FY 2002, NOAA repaired and reinstalled a 2.5 kilo-watt (kW) photovoltaic unit in American Samoa. This system was fully operational in FY 2002. NIST began operating its newly-installed 33 kW photovoltaic array on the roof of the Administration Building at its Gaithersburg, Maryland, facility in November 2001. This system does not include any storage and feeds the generated power directly into the existing building power system. NOAA has also installed a 10 kW photovoltaic system in San Diego, California, with assistance from DoE. However, this system wasn't operational until FY 2003.

2. **Purchased renewable energy.** NIST is currently purchasing wind-generated renewable power to supply a portion of the electrical needs of its facilities in Boulder, Colorado. In FY 2002, this site consumed 882 megawatt hours (MWH) of purchased renewable energy. NOAA is also purchasing wind-generated renewable power to supply a portion of the electrical needs of its facilities in

Boulder, Colorado. In FY 2002, this site consumed 1,129 megawatt hours (MWH) of purchased renewable energy.

C. **Petroleum.** Consumption of petroleum-based fuels in buildings in FY 1985 was 130.3 billion Btus. In FY 2002, this was reduced to 32.1 billion Btus. This is a 75 percent reduction since FY 1985.

D. **Water Conservation.** FY 2002 consumption is 214.8 million gallons, at a cost of $870.9 K. This does not include the Herbert C. Hoover Building in Washington, D.C. The DoC does not have a water baseline or consumption to report for this building since GSA retained responsibility for the water and sewer systems under the Delegation of Authority for Operations and Management to the DoC.

III. Implementation Strategies.

A. **Life-Cycle Cost Analysis.** Our Bureaus employ life-cycle cost analysis as an integral part of making investment decisions in products, services, construction, and other projects to lower the Federal Government's costs and to reduce energy and water consumption.

B. **Facility Energy Audits.** NIST completed an audit of 79 percent of its square footage at its Gaithersburg, Maryland, campus in conjunction with its Energy Savings Performance Contract (ESPC) project. This facility has been completely audited since 1992. NIST's Boulder, Colorado, campus has been audited recently and will be audited again in FY 2003 as part of a planned ESPC project.

NOAA conducted seven energy audits in FY 2002, representing 10 percent of total NOAA facility square footage. To date, NOAA has completed energy audits of 50 percent of total NOAA facility square footage.

No audits were performed during this fiscal year at the Herbert C. Hoover Building in Washington, D.C. The building was audited in 1998 and a total renovation of the building is scheduled to begin in FY 2005.

C. **Financing Mechanisms.** In FY 2002, DoC requested $1,150 K for the performance of energy audits and implementation of energy conservation measures; we received $400 K. Our FY 2003 Funding Request is $1,350 K. To compensate for the lack of energy project funding, NIST continued to develop the campus-wide ESPC project for its Gaithersburg, Maryland, facility. Award of the contract is expected in early FY 2003. NIST has also laid the groundwork to begin developing an ESPC project for its Boulder, Colorado, facility in FY 2003. NOAA has a Utility Energy Savings Contract (UESC) with the Bonneville Power administration. Using GSA's Area-wide contract,

the NOAA Sand Point facility in Seattle, Washington, signed a contract to replace inefficient lights and its outdated HVAC systems with energy-efficient systems. More UESC projects are being developed with planned award in FY 2003. NOAA is also working to develop regional ESPCs.

D. **ENERGY STAR® and Other Energy-Efficient Products**. The DoC supports the use of ENERGY STAR® and other energy-efficient products. Information on the availability and benefits of purchasing ENERGY STAR® products has been distributed to the appropriate functional managers and their contracting officers.

E. **ENERGY STAR® Buildings.** Commerce has elected to use the U.S. Green Building Council's LEED™ criteria instead of the ENERGY STAR® Building criteria. LEED™ is more comprehensive since it incorporates cost-effective energy efficiency requirements along with environmental sensitivity and maintenance considerations. Most new buildings and major renovations target a LEED™ silver rating.

F. **Sustainable Building Design**. The Department is a strong supporter of Sustainable Building Design. Most new buildings and major renovations target a LEED™ silver rating. NOAA has adopted sustainable building design principles developed under the LEED™ certification program that are being incorporated into the siting, design, and construction of new facilities.

G. **Energy Efficiency in Lease Provisions.** Energy and water efficiency are considered along with other factors when entering into new leases or renegotiating/extending existing leases. GSA leasing guidance is followed for buildings leased by and for the DoC.

H. **Industrial Facility Efficiency Improvements.** NOAA is researching the possibility of using a heat recovery system for fishery water. No suitable replacement systems have been identified to date. In prior years, NIST made significant improvements in its boiler and chiller operations at its Gaithersburg, Maryland, facility and is now concentrating efforts on reducing water consumption. NIST installed a dry pre-cooler on a reactor cooling system in FY 2002, and is exploring the use of non-potable water to replace city water in once-through cooling systems.

I. **Highly Efficient Systems**. Geothermal heat pumps are being considered for retrofit use in all NOAA facilities, and are being specified in construction contracts where appropriate. Incorporation of local natural resources are considered in all NOAA projects due to the emphasis on designing for LEED™ certification.

J. **Off-Grid Generation**. Small-scale projects that self-generate energy using renewable sources (such as photovoltaics or wind turbines) or renewable energy thermal projects (such as solar thermal, biomass, or geothermal) are used to

supplement commercial power. During FY 2002, NOAA repaired and reinstalled a 2.5 kilo-watt (kW) photovoltaic unit in American Samoa. NIST began operating its newly-installed 33 kW photovoltaic array on the roof of the Administration Building at its Gaithersburg, Maryland, facility in November 2001. NOAA has also installed a 10 kW photovoltaic system in San Diego, California, with assistance from DoE. However, this system wasn't operational until FY 2003.

K. Electrical Load Reduction Measures. NOAA facility managers coordinate participation with local utility companies to reduce electricity load during power emergencies. At NOAA's facility in Miami, Florida, a thermal storage system is planned to reduce electricity load during peak hours.

IV Data Tables and Inventories. The items listed below are provided as attachments unless otherwise noted.

A. FY 2002 Annual Energy Management Data Report. See Attachment 1.

B. Energy Scorecard for FY 2002. See Attachment 2.

C. Goals of Executive Order 13123 and National Energy Conservation Policy Act (NECPA), the Energy Policy Act of 1992 (EPACT). See Attachment 3.

D. Industrial and Laboratory Facilities Inventory. See Attachment 4.

E. Exempt Facilities Inventory. None.

F. FY 2003 Implementation Plan. See Attachment 5.

Attachment 1

FY 2002 Energy Management Data Report

Department of Commerce Facilities

FY 2002 ENERGY MANAGEMENT DATA REPORT

Agency: DOC Summary
Date: 12/18/2002

Prepared by: Regina Larrabee
Phone: 202-482-2345

PART 1: ENERGY CONSUMPTION AND COST DATA

1-1. Standard Buildings/Facilities

Energy Type	Consumption Units	Annual Consumption	Annual Cost (Thou. $)	Unit Cost ($)	Site-Delivered Btu (Billion)	Est. Source Btu (Billion)	Est. Carbon Emissions (Metric Tons)
Electricity	MWH	103,315.34	$8,152.81	$0.08 /kWh	352.5	1,068.9	16,265
Fuel Oil	Thou. Gal.	35.00	$21.90	$0.63 /gallon	4.9	4.9	97
Natural Gas	Thou. Cubic Ft.	36,879.30	$349.87	$9.49 /Thou Cu Ft	38.0	38.0	550
LPG/Propane	Thou. Gal.	0.00	$0.00	#DIV/0! /gallon	0.0	0.0	0
Coal	S. Ton	0.00	$0.00	#DIV/0! /S. Ton	0.0	0.0	0
Purch. Steam	BBtu	46.60	$836.20	$17.94 /MMBtu	46.6	64.8	1,660
Other	BBtu	0.00	$0.00	#DIV/0! /MMBtu	0.0	0.0	
		Total Costs:	$9,360.77	Total:	442.0	1,176.6	18,572
Standard Buildings/Facilities (Thou. Gross Square Feet)		5,650		Btu/GSF:	78,234	208,254	

1-2. Industrial, Laboratory, Research, and Other Energy-Intensive Facilities

Energy Type	Consumption Units	Annual Consumption	Annual Cost (Thou. $)	Unit Cost ($)	Site-Delivered Btu (Billion)	Est. Source Btu (Billion)	Est. Carbon Emissions (Metric Tons)
Electricity	MWH	198,246.8	$11,160.5	$0.06 /kWh	676.4	2,051.1	31,210
Fuel Oil	Thou. Gal.	196.5	$97.8	$0.50 /gallon	27.3	27.3	544
Natural Gas	Thou. Cubic Ft.	669,339.0	$4,668.6	$6.97 /Thou Cu Ft	690.1	690.1	9,986
LPG/Propane	Thou. Gal.	16.2	$11.7	$0.72 /gallon	1.5	1.5	26
Coal	S. Ton	0.0	$0.0	#DIV/0! /S. Ton	0.0	0.0	0
Purch. Steam	BBtu	0.0	$0.0	#DIV/0! /MMBtu	0.0	0.0	0
Other	BBtu	0.0	$0.0	#DIV/0! /MMBtu	0.0	0.0	
		Total Costs:	$15,938.6	Total:	1,395.3	2,770.0	41,766
Energy-Intensive Facilities (Thou. Gross Square Feet)		6,032.5		Btu/GSF:	231,299	459,171	

1-3. Exempt Facilities

Energy Type	Consumption Units	Annual Consumption	Annual Cost (Thou. $)	Unit Cost ($)	Site-Delivered Btu (Billion)	Est. Source Btu (Billion)	Est. Carbon Emissions (Metric Tons)
Electricity	MWH	0.0	$0.0	#DIV/0! /kWh	0.0	0.0	0
Fuel Oil	Thou. Gal.	0.0	$0.0	#DIV/0! /gallon	0.0	0.0	0
Natural Gas	Thou. Cubic Ft.	0.0	$0.0	#DIV/0! /Thou Cu Ft	0.0	0.0	0
LPG/Propane	Thou. Gal.	0.0	$0.0	#DIV/0! /gallon	0.0	0.0	0
Coal	S. Ton	0.0	$0.0	#DIV/0! /S. Ton	0.0	0.0	0
Purch. Steam	BBtu	0.0	$0.0	#DIV/0! /MMBtu	0.0	0.0	0
Other	BBtu	0.0	$0.0	#DIV/0! /MMBtu	0.0	0.0	0
		Total Costs:	$0.0	Total:	0.0	0.0	0
Exempt Facilities (Thou. Gross Square Feet)		0.0		Btu/GSF:	#DIV/0!	#DIV/0!	

1-4. Tactical Vehicles and Other Equipment

	Consumption Units	Annual Consumption	Annual Cost (Thou. $)	Unit Cost ($)	Btu (Billion)	Est. Carbon Emissions (Metric Tons)
Auto Gasoline	Thou. Gal.	1,432.2	$1,921.3	$1.34 /gallon	179.0	3,464
Diesel-Distillate	Thou. Gal.	107.4	$143.1	$1.33 /gallon	14.9	297
LPG/Propane	Thou. Gal.	1.0	$1.1	$1.10 /gallon	0.1	2
Aviation Gasoline	Thou. Gal.	2.9	$7.2	$2.48 /gallon	0.4	7
Jet Fuel	Thou. Gal.	169.8	$215.0	$1.27 /gallon	22.1	427
Navy Special	Thou. Gal.	0.0	$0.0	#DIV/0! /gallon	0.0	0
Other	Thou. Gal.	143.5	$171.9	$1.20 /MMBtu	143.5	
	Total Costs		$2,459.6		360.0	4,196

1-5. WATER CONSUMPTION, COST AND EFFICIENCY MEASURES

	Consumption Units	Annual Consumption	Annual Cost (Thou. $)
Water	Million Gal.	429.6	$870.9
Best Management Practice Implementation Tracking Data			
Number of facilities* in agency inventory			423.0
Number of facilities with completed water management plans			25.0
Number of facilities with at least four (4) BMPs fully implemented			1.0
*number in the agency inventory, can be buildings, bases, or campuses			

1-6. RENEWABLE GREEN ENERGY PURCHASES

(Only include renewable energy purchases developed or contracted after 1990)

	Consumption Units	Annual Consumption	Annual Cost (Thou. $)
Electricity from Renewables	MWH	2,011.2	$50.3
Natural Gas from Landfill/Biomass	MMBtu	0.0	$0.0
Renewable Thermal Energy	MMBtu	0.0	$0.0
Other Renewable Energy_____ *		0.0	$0.0

*For other renewable energy that does not fit any category, please fill in the type, units used, annual consumption and cost, and include any additional information in your narrative submission. For example, biodiesel used in non-transportation applications. (Renewable fuels used for transportation will be collected through GSA's Fleet Managment reporting process.)

1-7. SELF-GENERATED RENEWABLE ENERGY INSTALLED AFTER 1990

	Consumption Units	Total Annual Energy	Energy Used by Agency*
Electricity from Renewables	MWH	46.0	46.0
Natural Gas from Landfill/Biomass	MMBtu	0.0	0.0
Renewable Thermal Energy**	MMBtu	0.0	0.0
Other Renewable Energy_____ ***		0.0	0.0

*Energy used by agency equals total annual generation unless a project sells a portion of the energy it produces to another agency or the private sector. It can equal zero in the case of non-Federal energy projects developed on Federal land.

**Examples are geothermal, solar thermal, and geothermal heat pumps, and the thermal portion of combined heat and power projects. Thermal energy from geothermal heat pumps should be based on energy savings compared to conventional alternatives.

***For other renewable energy that does not fit any category, fill in the type, units used, annual consumption and cost, and include any additional information in your narrative submission. For example energy displaced by daylighting technology or passive solar design.

PART 2: ENERGY EFFICIENCY IMPROVEMENTS

2-1. DIRECT AGENCY OBLIGATIONS

	FY 2002		Projected FY 2003	
	(MMBTU)	(Thou. $)	(MMBTU)	(Thou. $)
Direct obligations for facility energy		$1,783.0		$1,246.0
Estimated annual savings	3,000.0	$90.0	3,003.4	$110.0

2-2. ENERGY SAVINGS PERFORMANCE CONTRACTS (ESPC)

	Annual savings (MMBTU)	(number/Thou. $)
Number of ESPC Task/Delivery Orders awarded in fiscal year & annual energy (MMBTU) savings.	0.0	0.0
Investment value of ESPC Task/Delivery Orders awarded in fiscal year.		$0.0
Amount privately financed under ESPC Task/Delivery Orders awarded in fiscal year.		$0.0
Cumulative guaranteed cost savings of ESPCs awarded in fiscal year relative to the baseline spending.		$0.0
Total contract award value of ESPCs awarded in fiscal year (sum of contractor payments for debt repayment, M&V, and other negotiated performance period services).		$0.0
Total payments made to all ESP contractors in fiscal year.		$0.0

NIST ESPC for Gaithersburg, MD facility awarded during 1st Quarter FY2003.
Details will be reported in FY 2003 report.

2-3. UTILITY ENERGY SERVICES CONTRACTS (UESC)

	Annual savings (MMBTU)	(number/Thou. $)
Number of UESC Task/Delivery Orders awarded in fiscal year & annual energy (MMBTU) savings.	3,000.0	0.0
Investment value of UESC Task/Delivery Orders awarded in fiscal year.		$800.0
Amount privately financed under UESC Task/Delivery Orders awarded in fiscal year.		$800.0
Cumulative cost savings of UESCs awarded in fiscal year relative to the baseline spending.		$53.0
Total contract award value of UESCs awarded in fiscal year (sum of payments for debt repayment and other negotiated performance period services).		$800.0
Total payments made to all UESC contractors in fiscal year.		$293.0

2-4. UTILITY INCENTIVES (REBATES)

	Annual savings (MMBTU)	(Thou. $)
Incentives received and estimated energy savings	3,000.0	$68.1
Funds spent in order to receive incentives		$800.0

2-5. TRAINING

	(number)	(Thou. $)
Number of personnel trained/Expenditure	15.0	$4.5

Attachment 2

Energy Scorecard for FY 2002

FY 2002 Federal Agency Energy Scorecard

Department/Agency Name	Contact Name and Phone
Department of Commerce	Regina Larrabee / 202-482-2345
Name of Senior Energy Official	**Signature of Senior Energy Official**
Otto J. Wolff, CFO/ASA	

Did your agency . . .	Yes	No	Anticipated Submittal Date
Submit its FY 2002 energy report to OMB and DOE by January 1, 2003 (Sec. 303)?		X	January 31, 2003
Submit a FY 2003 Implementation Plan by January 1, 2003 (Sec. 302)?		X	January 31, 2003
Did your agency . . .	**Yes**	**No**	**Comments**
Implement or continue to use new renewable energy projects at Federal installations or facilitate the siting of renewable generation on Federal land in FY 2002 (Sec. 204)? (Refer to Table 1-6 on the Energy Management Data Report)	X		If yes, how many projects and how much energy generated? (Specify unit: MWH or MMBtu) Solar 3 46.0 MWH Wind ____ ____ ____ Thermal[1] ____ ____ ____ Biomass ____ ____ ____ Other RE ____ ____ ____
Purchase energy generated from new renewable energy sources in FY 2002 (Sec. 204)?	X		If yes, how much: 2011.2 MWH[1] or ____ MMBtu
Invest direct FY 2002 appropriations in projects contributing to the goals of the Order (Sec. 301)?	X		If yes, how much: $ 1,883 K
Specifically request funding necessary to achieve the goals of the Order in its FY 2004 budget request to OMB (Sec. 301)?	X		If yes, how much: $ 1,726.3 K
Perform energy audits of 10% of its facility space during the fiscal year (Sec. 402)?	X		What percentage of facility space was audited during the FY? 27 % How much facility space has been audited since 1992? 98 %
Issue to private-sector energy service companies (ESCOs) any energy savings performance contract (ESPC) task orders (Sec. 403(a))? (Refer to Table 2-2 on the Energy Management Data Report)		X[2]	How many? 0 Annual savings (MMBtu): ____ Total investment value: $ ____ Cumulative guaranteed cost savings: $ ____ Contracts award value: $ ____
Issue any utility energy services contract (UESC) task orders (Sec. 403(a))? (Refer to Table 2-3 on the Energy Management Data Report)	X		How many? 1 Annual savings (MMBtu): 3,000 Total investment value: $ 900K Cumulative cost savings: $ 53K Contracts award value: $ 800K

1 Estimated. Actual consumption not available.
2 Award of NIST ESPC Delivery Order expect in early FY 03.

Did your agency . . .	Yes	No	Comments
Incorporate energy efficiency requirements into relevant acquisitions (Sec. 403(b)(3))?	X		
Adopt and apply the sustainable design principles (e.g., Whole Building Design Guide, Leadership in Energy and Environmental Design) to the siting, design, and construction of new facilities or major (budget line item) renovations begun in FY 2002(Sec. 403(d))?	X		Number of new building design/construction projects in FY 2002: 18 Number of these projects that incorporated sustainable design principles: 18
Provide training to appropriate personnel[3] on energy management (Sec. 406(d))?	X		Number of appropriate personnel trained: 15 Total number of appropriate personnel: 126
Implement any additional management tools (Sec. 406)?	X		Check all that apply: Awards: X Performance Evaluations: X Showcase Facilities: X Number of Showcase Facilities designated in fiscal year: 2
Establish Water Management Plans and implement at least 4 Best Management Practices in at least 5% of agency facilities?	X		Number of facilities with Water Management Plans: 26

NOTE: Provide additional information if a "no" reply is used for any of the questions above.

Please enter data from annual energy report pertinent to performance toward the goals of Executive Order 13123.	Base Year	Previous Year (2001)	Current Year (2002)	% Change (Current vs. Base)
Site Energy Efficiency Improvement Goals (Sec. 202). 1985 Base Year	119,476 Btu/Ft^2	79,074 Btu/Ft^2	78,234 Btu/Ft^2	35 %
Source Energy Use (Sec. 206). 1985 Base Year	241,648 BBtu	227,006 BBtu	208,254 BBtu	14 %
Industrial/Energy Intensive Facilities Goals (Sec. 203). 1990 Base Year	315,975 Btu/unit	246,253 Btu/unit	231,299 Btu/unit	27 %
Water Conservation Goal (Sec. 207). 2000 Base Year[4]	627.9 MGal	465 MGal	429.6 MGal	32 %
Renewable Energy (Sec. 204). Energy used from self-generation and RE power purchases	N/A	BBtu	BBtu	N/A

Abbreviation Key: Btu/Ft^2 = British thermal units per gross square foot
Btu/unit = British thermal units per unit of productivity (or gross square foot when such a unit is inappropriate or unavailable)
MGal = Million gallons
MMBtu = Million British Thermal Units
BBtu = Billion British Thermal Units
RE = Renewable energy
N/A = Not applicable

3 Appropriate personnel include the agency energy management team as well as Federal employees and on-site contractors who are energy or facility managers, operations and maintenance workers, design personnel, procurement and budget staff, and legal counsel.
4 Base year data is in question.

Attachment 3

Goals of Executive Order 13123 and NECPA/EPACT

Goals of Executive Order 13123 and National Energy Conservation Policy Act (NECPA), the Energy Policy Act of 1992 (EPACT)

Executive Order 13123

Category	Goal	Comments
Greenhouse Gas Emissions	30% reduction by 2010	Base year is 1990. DOE will calculate agencies' progress toward this goal and report it on agencies' annual energy scorecards
Energy Efficiency		
Standard Buildings	• 30% improvement by 2005 • 35% improvement by 2010	Base year is 1985
Energy Intensive Facilities	• 20% improvement by 2005 • 25% improvement by 2010	Base year is 1990
Exempt Facilities	N/A	Despite lack of quantitative goal, agencies should implement strategies to improve energy efficiency at these facilities.
Renewable Energy	• Implement renewable energy projects • Purchase electricity from renewable energy sources • Install 2,000 solar energy systems at Federal facilities by 2000 • Install 20,000 solar energy systems at Federal facilities by 2010	Installation of Federal solar energy systems will help support the Million Solar Roofs initiative
Petroleum	Reduce petroleum use	Switches to alternative energy sources should be life-cycle cost effective
Source Energy	Reduce use of source energy	Accomplish by undertaking projects that are life-cycle cost effective
Water Conservation	Reduce water consumption*	Accomplish via life-cycle cost effective measures, energy-savings performance contracts, or other financing mechanism

NECPA/EPACT

Energy Efficiency	20% improvement by 2000	Base year is 1985
Financing	Undertake all energy efficiency improvement projects that have a simple payback period of 10 years or less by 2005	E. O. 13123 expands this goal by mandating that any energy efficiency project that is life-cycle cost effective be undertaken
Audits	Conduct audits for energy efficiency on 10% of facilities annually	E. O. 13123 includes language supporting this goal

* The Federal Energy Management Program (FEMP) has established water efficiency improvement goals as directed by the Executive Order. Agencies must implement Water Management Plans and Best Management Practices according to the following schedule:

05% of facilities by 2002
15% of facilities by 2004
30% of facilities by 2006
50% of facilities by 2008
80% of facilities by 2010

For more detail, see the FEMP guidance document Water Efficiency Improvement Goal for Federal Agencies.

Attachment 4

Industrial and Laboratory Facilities Inventory

Industrial and Laboratory Facilities Inventory

Facility Name	Location
National Institute of Standards & Technology Campus	Gaithersburg, Maryland
National Institute of Standards & Technology Campus	Boulder, Colorado
National Oceanographic and Atmospheric Administration sites:	
NWS Electronic Tech Shop	Juneau, Alaska
NMFS Auke Bay Facility	Juneau, Alaska
NMFS Marine Warehouse	Juneau, Alaska
NWS Weather Forecast Office	No. Little Rock, Arkansas
NMFS SW Fisheries Center	San Diego, California
OAR Optics Facility	Boulder, Colorado
OAR Laboratory Building	Platteville, Colorado
OAR Laboratory Building	Erie, Colorado
OAR Laboratory Building	Rollinsville, Colorado
NMFS Facility	Milford, Connecticut
NMFS Statistics Office	Houma, Louisiana
NWS Weather Forecast Office	Pleasant Hill, Missouri
NWS NEXRAD Bldg	St. Charles, Missouri
NWS Weather Forecast Office	Jackson, Mississippi
NOS Facility	Beaufort, North Carolina
NWS Weather Forecast Office	Albuquerque, New Mexico
NMS Balloon Inflation Building	Winnemuca, Nevada
NWS Weather Forecast Office	Portland, Oregon
NWS Weather Forecast Office	Medford, Oregon
NWS NEXRAD Facility	Coraopolis, Pennsylvania
NWS Weather Forecast Office	Old Hickory, Tennessee
NESDIS Facility	Wallops Island, Virginia
NMFS Montlake Laboratory	Seattle, Washington

Attachment 5

FY 2003 Implementation Plan to this FY 2002 Annual Report

Department of Commerce
2003 Implementation Plan for Energy Management

Introduction

Executive Order (E. O.)13123, *Greening the Government Through Efficient Energy Management*, directs the Federal Government to take a leadership role in energy management by significantly improving energy use in order to save taxpayer dollars and reduce emissions that contribute to air pollution and global climate change. This Order builds on work begun under the Energy Policy Act of 1992 (EPACT) and previous executive orders.

In addition, E. O. 13123 directs agencies to conserve water and to use more cost-effective renewable energy technologies, which include solar, wind, geothermal, and biomass energy systems. The Order also requires Federal agencies to develop implementation plans for fulfilling the goals of the Order, which require each agency to reduce its overall energy consumption by 30 percent by 2005 and 35 percent by 2010, in comparison to 1985 baseline levels, and to reduce green-house gas emissions by 30 percent by 2010 in comparison to 1990 levels.

In February 2002, the Department of Commerce (DoC) finalized and published our Strategic Implementation Plan for Energy Management to ensure that these goals are accomplished in the Department's facilities and that all the attendant benefits are realized. These benefits include the cost savings associated with reduced energy and water use, fewer and simpler requirements for operations and maintenance, and improvements in DoC mission operations and working conditions, particularly in the indoor environment, which often result in greater productivity.

I. Management and Administration. The Department includes a wide variety of individual bureaus, who, collectively represent a powerful role in the U.S. economy. The activities of the Department and its Bureaus promote economic growth through improved technology, sustainable development, increased trade, and information analysis.

Commerce's Department Administrative Order #217-16, "Federal Energy Management", prescribes policies, assigns responsibility, and provides program guidelines for energy and water management. Responsibility for energy and water management in Commerce facilities include the following:

- Headquarters, Herbert C. Hoover Building (energy only),
- National Oceanic and Atmospheric Administration (NOAA),
- National Institute of Standards and Technology (NIST),
- National Technical Information Service, and
- Bureau of Census.

A. Energy Management Infrastructure E. O. 13123 requires that each agency designate a senior official, at the Assistant Secretary level or above, to be responsible for meeting the

goals and requirements of this order, and that each agency shall form a technical support team consisting of appropriate procurement, legal, budget, management, and technical representatives. The energy management infrastructure supporting DoC's energy management implementation plan is as follows.

1. **Senior Agency Official**. The Senior Official for the Agency Energy Team is Mr. Otto J. Wolff, Chief Financial Officer and Assistant Secretary for Administration.

2. **Agency Energy Team**. The Department's Agency Energy Team members are:

   - Jim Woods, Associate Director, Office of Real Estate Policy and Major Programs, DoC;
   - Regina Larrabee, Energy Manager, DoC;
   - Mike Sade, Director, Acquisition Management, DoC;
   - Douglas Elznic, Associate Director, Office of Space and Building Management, DoC;
   - Gordon B. Fox, Chief, Facilities Engineering Unit, NIST;
   - Mark Kuklewicz, Facilities Engineering Group, NIST;
   - Bernie Denno, Chief, Environmental Compliance and Safety Division, NOAA.

   The Agency Energy Team shall continually monitor the progress of the agency in implementing specific actions of the plan and advise the Senior Agency Official of any action that should be taken to provide DoC personnel with the training and resources necessary to ensure successful implementation.

B. Management Tools

1. **Awards (Employee Incentive Programs).** Each Bureau will continue to take advantage of its own incentive programs to reward its exceptional employees. In addition, the Department will continue to be active participants in the "You Have The Power" and "Federal Energy and Water Management Awards" programs, sponsored by the Department of Energy (DoE).

2. **Performance Evaluations.** Key Department and Bureau Energy Managers have energy efficiency elements in both their position descriptions and as performance elements. Bureaus will work toward including energy efficiency elements in position descriptions and performance plans for other staff members.

3. **Training and Education.** Agencies must ensure that all appropriate personnel receive training in implementing the order. Agencies are also required to develop outreach programs that include education, training, and the promotion and use of

ENERGY STAR® and other energy-efficient products. The following actions will be taken to help meet this goal:

- The Agency Energy Team will identify training opportunities.
- Targeted awareness programs will be emphasized, to explain the practical benefits of energy efficiency and what people can do to make the implementation plan a success.
- The Department will revise its energy webpage to be more accessible and more informative to the Bureau energy managers.

4. **Showcase Facilities.** Agencies are directed to designate exemplary new and existing facilities as Federal Energy Saver Showcases. These facilities should contain systems that represent some of the best applications of energy efficiency and renewable energy in the government, and they should show how each helps the entire government run more cost effectively and efficiently. DoC will meet this objective in the following way:

   - Follow Federal Energy Management Program (FEMP) criteria for Federal Energy Saver Showcase designation. Assign priorities to facilities on the basis of project quality, with special emphasis on sustainable design.
   - Nominate at least one facility to be a Showcase each year to recognize its accomplishments.

5. **Reporting.** In FY 2003, the Department will evaluate some web-based options to modernize our energy reporting procedures and improve the accuracy of our data.

II. Implementation Strategies.

A. Life-Cycle Cost Analysis. Under Section 401 of E. O. 13123, agencies are required to use life-cycle cost analysis to make good business decisions about their investments in energy-saving projects, products, services, and construction. This method is especially useful for evaluating the costs and benefits of energy and water conservation projects in Federal facilities. The following actions are those DoC will take in order to improve life-cycle costs:

- Identify appropriate facility and procurement staff and provide training for life-cycle cost assessments following the guidance developed and in use at NIST.
- Use life-cycle cost analysis for all energy management projects and all major procurement actions.

B. Facility Energy Audits. Since 98 percent of the facilities have been audited in the last 10 years as required by EPACT, we will not focus our efforts on auditing. Some audits

will, however, be performed in the process of executing projects, particularly those involving third party financing (Energy Savings Performance Contracts (ESPCs) and Utility Energy Savings Contracts (UESCs)).

C. Financing Mechanisms. NIST is scheduled to make a final award of its ESPC project at it's Gaithersburg, Maryland, facility in early FY 2003. NIST also plans to initiate an ESPC for its Boulder, Colorado, campus. NOAA will continue to explore the use of ESPCs and UESCs at its facilities.

D. ENERGY STAR® and Other Energy-Efficient Products. Section 403b of the order directs agencies to select **ENERGY STAR®** and other energy-efficient products. Therefore, DoC will meet this goal with the following actions:

- Partner with FEMP to review DoC guidelines and specifications.
- Incorporate energy-efficient criteria consistent with **ENERGY STAR®** and FEMP-designated energy efficiency products into all guidelines and specifications for new projects.

E. ENERGY STAR® Buildings: DoC will continue to use the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED™) criteria instead of the ENERGY STAR® Building criteria.

F. Sustainable Building Design. Agencies are directed to apply sustainable design principles developed by the Department of Energy (DoE), the General Services Administration (GSA), and the Department of Defense. Accordingly, DoC shall:

- Incorporate sustainable design criteria into requirements for all new construction and major renovation projects.
- Implement new procurement guidelines specifying the use of certain sustainable materials in new construction and major building retrofit projects.

G. Energy Efficiency in Lease Provisions. Energy and water efficiency are considered along with other factors in entering into new leases or renegotiating/extending existing leases. GSA leasing guidance is followed for buildings leased for DoC by GSA.

H. Industrial Facility Efficiency Improvements. Section 403 of the E. O. states that, through life-cycle cost-effective measures, each agency shall reduce energy consumption by 20 percent by 2005 and by 25 percent by 2010, relative to 1990 consumption levels. No facilities are to be exempt from these goals unless they meet certain DoE criteria. Therefore, DoC will meet this goal through these actions:

- Work with the U.S. Environmental Protection Agency's and DoE's Laboratories for the 21st Century (Labs21) Partnership to implement appropriate energy efficiency improvements in all DoC laboratories.
- Identify appropriate projects (such as the recent National Marine Fisheries Services Laboratory project in Honolulu, Hawaii) and assign priorities to them.

I. **Highly Efficient Systems.** Geothermal heat pumps are being considered for retrofit use in all NOAA facilities, and are being specified where appropriate. Incorporation of local natural resources are considered in all NOAA projects due to the emphasis on designing for LEED™ certification.

J. **Off-Grid Generation.** Section 403h states that agencies shall use off-grid generation systems, including hot water, solar electric, solar outdoor lighting , small wind turbines, fuel cells, and other off-grid alternatives where such systems are life-cycle cost effective. We will meet this goal through the following actions:

- Install photovoltaic systems on several buildings to reduce peak-load demand and reduce energy consumption and costs.
- Identify, through facility energy audits, and implement life-cycle cost-effective projects for other off-grid systems, including solar hot water, solar electric, solar outdoor lighting , small wind turbines and fuel cells.
- Apply for FEMP funding for cost-effective Distributed Energy Resource projects.

K. **Renewable Energy Purchases.** Section 204 of the order directs that the equivalent of 2.5 percent of Federal facilities' electricity must come from new renewable energy sources by 2005. Agencies are to expand the use of renewable energy within facilities through targeted projects and energy purchases from renewable sources. Agencies should also support the Million Solar Roofs Initiative, which directs the Government to install 20,000 solar energy systems in Federal facilities by 2010. Accordingly, DoC will take the following actions in order to meet this goal:

- Identify facilities that could benefit from the use of solar water, space heating, electricity produced by photovoltaic or wind energy systems, or geothermal or biomass-based energy systems.
- Work with FEMP to identify opportunities to purchase renewable (green) power from utilities and other sources.
- Work with FEMP and GSA to purchase on-site renewable energy systems and to include renewable power provisions in DoC facilities in states with open electricity markets.

L. **Electrical Load Reduction Measures.** The President's memorandum, dated May 3, 2001, titled "Energy Conservation at Federal Facilities," requires Federal agencies to take appropriate actions to conserve energy use at their facilities to the maximum extent

consistent with the effective discharge of public responsibilities. We will meet this goal though the following actions:

- Reduce our energy use, particularly in regions where electricity shortages may occur and during periods of peak electrical demand.
- Establish or enhance communications with local utility companies, understand their needs for load reductions and work with them to develop an individual facility plan.
- Identify load-reduction measures appropriate for the facilities, and separate loads into life, health, and safety driven; mission-critical; and non-critical.
- Establish a process to alert employees of unexpected high-demand days, including but not limited to e-mail, voice mail, and public address announcements to all employees.
- Monitor total facility demand and demand for individual major loads.
- Monitor weather forecasts to predict high-demand days and be proactive in communicating with the local utility to assess the need to reduce the load.
- Initiate load-reduction measures by directing employees to take steps to reduce electricity use for lighting, personal computers, and appliances.
- Encourage employees to reduce electrical loads in their homes.
- Initiate conservation measures for lighting, personal computers and appliances, air-conditioning, and other energy-using equipment.
- Purchase products that use one watt or less in standby mode, as required by E. O. 13221, *Energy-Efficient Standby Power Devices*.

M. Water Conservation. Section 207 of E. O. 13123 calls for agencies to reduce water consumption and associated energy use in their facilities. Agencies must therefore implement water management plans and Best Management Practices (BMPs) in their facilities to help offset steep rises in costs. To meet the goals of this part of the order, DoC will take the following actions:

- Establish a reliable baseline for water consumption in DoC facilities
- Develop an agency-wide water management plan.
- Review current operating plans and include water management and BMPs wherever applicable, in accordance with DoE guidance.
- Implement appropriate BMPs in 10 percent of facilities by 2003 and 15 percent of facilities by 2004.
- Include water cost savings and sewage savings in all projects, including ESPCs and UESCs.

For additional information about this program, or to submit questions or suggestions, you may contact Ms. Regina Larrabee, Energy Manager, Office of Real Estate Policy and Major Programs at 202-482-2345.